Canada. National Energy Board

Report on Pricing of Natural Gas Being Exported Under Existing Licences

CANADA

NATIONAL ENERGY BOARD
REPORT TO
THE GOVERNOR IN COUNCIL

In the Matter of the Pricing of Natural Gas
Being Exported under Existing Licences

February 1979

N A T I O N A L   E N E R G Y   B O A R D

R E P O R T   T O

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In the Matter of the Pricing of Natural Gas
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I BACKGROUND

Since 1974, the Board has conducted a series of reviews of the price of natural gas being exported from Canada under existing licences and made recommendations thereon to the Government. These reviews were conducted by the Board under Section 11A of the Regulations made pursuant to Part VI of the National Energy Board Act, adopted in 1970, which requires the Board to maintain surveillance of border prices after a licence has been issued.

The Board last reported to the Governor in Council on Canadian natural gas export prices in April 1977. In that review, the Board introduced the concept of substitution value as the main criterion for determining the appropriate selling price for Canadian natural gas in export markets as represented by the cost of displacing imported crude oil in eastern Canada with Canadian natural gas. In addition, the Board recommended that the export price be set in United States dollars in order to eliminate the debilitating effect on export revenues of the decline in the value of the Canadian dollar.

In calculating the substitution value the Board used for the value of crude oil imported into eastern Canada, Saudi Arabian light crude oil (34° A.P.I. with 1.7 per cent sulphur) or "marker crude" as it is generally known. Although

this particular crude oil is not usually imported into Canada, it is an internationally accepted reference crude oil, and its estimated landed value in Canada is a satisfactory representative of the value of the offshore oil mix that is actually imported.

Since the April 1977 Report, the Board has undertaken two further reviews, one in February 1978 and another in September, 1978. Following both these reviews, the Board concluded that no change in the export price of $2.16* per MMBtu for Canadian natural gas exports was warranted.

II CONSIDERATIONS

In order to keep under review the reasonableness of the selling price for Canadian gas in export markets, the Board maintains a continuing surveillance over international energy developments, the cost to Canadians of foreign crude oil imports, and the selling price of alternative energy forms in Canadian natural gas export markets. The Board is also monitoring the impact of the U.S. Natural Gas Policy Act of 1978 on the supply and price of natural gas in intrastate and interstate markets.

In light of the existing Government policy to use the substitution value concept for determining the price of currently approved exports of natural gas, the most important considerations at this time are the following:

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*All prices quoted in this report are in U.S. Dollars.

(a) Price Increase of Saudi Arabian Light Crude Oil

The price of Saudi Arabian light crude oil was previously fixed at $12.70 per barrel (34° A.P.I. with 1.7 per cent sulphur) and this was used as the reference world oil price in calculating the substitution value of Canadian natural gas exports.

OPEC announced on December 16, 1978 that the price of Saudi Arabian Light crude oil was to be raised by 14.5 per cent in four steps during 1979. The first scheduled increase, of 5 per cent on January 1, raised the price of Saudi Arabian Light crude oil to $13.33 per barrel. Further scheduled increases in price are: on April 1, 3.8 per cent to $13.84; on July 1, 2.3 per cent to $14.16; and on October 1, 2.7 per cent to $14.54.

(b) International Tanker Rates and Domestic and Pipeline Tariffs

The international tanker rates and the related domestic and the United States pipeline tariffs, which have a direct influence on the determination of substitution value, are expected to change significantly during 1979. Freight rates from the Persian Gulf to Portland, Maine have remained stable for some time at approximately $1.21 per barrel. The current spot rate, a main indicator of changes in long term charter rates, is around $2.00 per barrel, and there is

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an opinion among shippers and experts that the current long term charter rates will gradually move upwards and average about $1.35 per barrel during 1979. In addition, the landed value of foreign crude oil in Montreal has been subject to a further increase in price as the tariff on the Portland to Montreal pipeline increased from 21 cents to 48 cents per barrel, because of the decision to reduce crude oil imports and supply Montreal refineries with more Canadian western crude oil.

(c) Substitution Value Determination

The current substitution value was fixed at $2.16 per MMBtu in September 1977. Using the announced Saudi Arabian light crude f.o.b. prices and taking into consideration the domestic and U.S. crude tariffs together with the latest Canadian gas transportation rates, the new substitution values for each quarter of 1979 are calculated to be $2.30, $2.39, $2.44, $2.51 per MMBtu respectively.

When deciding what recommendations to make, the Board also considered those current events which impact both directly and indirectly on the market for Canadian gas in the United States, specifically:

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1. <u>The Proposed Sale of Mexican Gas to the United States</u>

The Mexican National Oil and Gas Corporation (Pemex) negotiated in 1977 with six United States importers to sell up to two billion cubic feet per day of gas at a base U.S. border price of $2.60 per MMBtu. Initial deliveries were to be one billion cubic feet daily, expanding later to two billion. The base price under the contract was to be related to the Btu equivalency of No. 2 oil refined from world-priced crude, landed in New York. Approval of this import was not given by United States authorities primarily due to the contract price, which was considered to be too high, and was, among other things, higher than the $2.16 price of imported Canadian gas.

Interest in importing Mexican gas has once again been revived, mainly due to the impact of the Iranian situation, however, while this appears to be an attractive source of up to 2 Bcf/d, the United States has indicated that such a source of supply would be acceptable only insofar as it would not result in the shutting in of domestic capacity or diminishing incentive for domestic exploration. Specifically, the United States does not appear to contemplate large volume imports of Mexican gas until the Alaskan volumes are available to the lower 48 States.

2. The Impact of the Iranian Situation on Crude Oil Prices

From April 1978 to October 1978, nearly 21 per cent of the foreign crude oil imported into eastern Canada originated from Iran. Since October, little has been imported from Iran because of the production restrictions resulting from the political upheavals in that country. The effect of the Iranian situation should be viewed not only from the standpoint of the proportion of Canadian oil imports from Iran but also viewed in the context of the global supply picture. Countries which are heavily dependent upon Iran for oil supplies must now look to other oil producing countries in order to maintain their domestic needs. Production has been increased by a number of other exporting countries partially offsetting the loss of Iranian production, however these increases have, in a number of cases, been accompanied by substantial premiums or other conditions equivalent to price increases.

Canada, which imports about 50 per cent of its foreign crude supplies from OPEC countries, is now paying $13.33 per barrel for OPEC oil and will be forced to pay such higher prices as may emerge as a result of the Iranian situation.

3. Effect of the United States Natural Gas Policy Act of 1978 On Interstate and Intrastate Natural Gas Supplies

The U.S. Natural Gas Policy Act of 1978, which established a new ceiling price of about $2.00 per Mcf for intrastate gas, has resulted in the freeing of large supplies of intrastate natural gas for the interstate market. These previously uncommitted volumes of gas are available due to high levels of development drilling in recent years in producing states, resulting in additional gas reserves (11.8 Tcf added in 1977), however, this gas was not offered to the interstate market because the prevailing regulated price was considered to have been too low. U.S. production has remained relatively stable since 1975, at approximately 19 Tcf per year, with market growth halted due to conservation, the effect of higher prices, the switching of large industrial customers to other fuels due to uncertain supply and government policy. The end of the price differential between interstate and intrastate gas sales has freed up as much as 2 Tcf of surplus annual deliverability from the intrastate markets (mainly Texas, Oklahoma and Louisiana). These factors together with declining consumption have resulted in a temporary gas supply "bubble" or a short-term supply/demand imbalance which some experts suggest may last two to three years.

In a recent study, the Federal Energy Regulatory Commission concluded, based on the information supplied by the twenty-nine major interstate pipeline companies, that the available natural gas supplies for the 1978/79 winter season would exceed by almost 1 Tcf those available during the 1977/78 heating season. Seventeen of the companies surveyed indicated adequate gas supplies to meet all requirements even under the severest weather situation, while ten companies indicated that only modest amounts of additional gas supplies might be needed under certain circumstances to forestall plant shutdowns under normal weather conditions. Another study completed by the Research Service of the U.S. Congress concluded, under an assumption of no growth in demand, that there would be enough gas to fulfill the needs of the three highest priority user categories to the end of the century.

Whether the United States has a temporary gas supply "bubble", or a longer term supply sufficiency to meet demand, the apparent turn-around of gas supplies, for whatever reason, will undoubtedly impact on public and Congressional perceptions of the need for higher priced imports and the need to proceed with certain aspects of the Natural Gas Policy Act, especially those concerning scheduled increases in the interstate gas price. Among possible short term effects may be a reluctance among major natural gas companies to contract for new supplies of Canadian, Mexican or Alaskan gas at prices above those prevailing under the Natural Gas Policy Act.

On the other hand, looking at the current short-term gas "bubble" in light of the recently announced OPEC price increases for foreign crude oil, it is possible that many industries and utilities which currently burn oil will be urged by the U.S. government to switch to natural gas in order to hold down oil imports. Besides being able to lower the impact of the announced OPEC 14.5 per cent price increase on the U.S. balance of payments, such a program would have an immediate effect in utilizing the new found surplus gas and could reinforce longer run requirements for new gas supply sources, including therefore requirements for Canadian gas.

4. Effect of Existing Export Price on Current Markets

Total deliveries of Canadian natural gas to the United States in 1978 were some 110 Bcf less than deliveries in 1977, with nearly all of the shortfall occurring in the California and Pacific Northwest markets, and especially in the Pacific Northwest area served by Westcoast Transmission under Licence GL-41. Canadian gas, which is a high price fuel relative to alternative fuels, including indigenous gas supplies, has had to compete for some time with a surplus of residual fuel oil, arising partly from imports of low-priced offshore product and partly from the availability of Alaskan North Slope crude with its characteristically high heavy fuel oil yield. The fuel oil surplus has given rise to a serious disruption in the natural gas market, especially in the industrial sector.

Another reason for the depressed demand for Canadian gas in Northern California has been the increased availability during 1978 of hydraulically produced electric power which, while curtailed in the several years previous by prevailing drought conditions, was produced at maximum capacities following unusually heavy rains in the early months of 1978.

In the Midwest market area, Michigan Consolidated which had anticipated the possibility of a substantial surplus in gas supplies, consequently made arrangements to sell to Pacific Interstate their surplus gas. Subsequently the contract was cancelled due to other gas becoming available at lower prices. The enactment of the Natural Gas Policy Act and the resultant freeing of intrastate gas in sufficient quantity at prices lower than the Canadian export price has changed the market situation, at least in the short-run. Declining consumption due to conservation and State curtailments of industrial and utility consumption has further contributed to a general decrease in gas demand in this market area.

Throughout all export market areas, customer resistance to increased prices is becoming more apparent. Certain United States gas importing companies have applied for or received authorization to re-sell Canadian gas that, under current market conditions, is surplus to their requirements. The

following companies have filed applications which are either pending before or have recently received authorization from the FERC to re-sell Canadian gas surplus to their requirements:

(a) Northwest Pipeline Corporation: sale of 200 MMcf/d to Southern California Gas Company;

(b) Northwest Pipeline Corporation: sale of up to 50 MMcf/d to Southwest Gas Corporation for Nevada and Arizona service areas;

(c) Montana Power Company: sale of up to 17.5 MMcf/d to Northern Natural Gas Company;

(d) Midwestern Gas Transmission: sale of 26.7 MMcf/d to Tennessee Gas Pipeline; and

(e) Michigan Consolidated Gas Company: sale of 101 Bcf to Pacific Interstate Transmission Company[1].

In the Board's recently concluded natural gas supply/demand hearing, the government of British Columbia gave evidence that Northwest Pipeline Corporation, which is the sole export customer of Westcoast Transmission Company, has been purchasing considerably less gas than the maximum entitlement under export Licence GL-41[2], because the cost of Canadian gas is

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(1) In early December 1978, Michigan Consolidated and Pacific Interstate withdrew their applications to FERC indicating the availability of domestic supplies at lower prices.

(2) The issue of levels of take by Northwest Pipeline Corporation under its contract with Westcoast was reported to the Governor in Council in the Board's Report of June 1978 dealing with Westcoast's mainline looping application.

higher than alternative energy sources, and because administered export prices have overridden the take or pay provisions of the original gas purchase contracts. This problem may be partially allevaited this coming year by recent and prospective off-line sales by Northwest Pipeline of some 250 MMcf/d of Canadian gas to southern California, Nevada and Arizona.

In summary, it is clear that the prevailing price for Canadian natural gas exports during 1978 was a factor contributing to the drop in gas exports from 1977 levels. Under the current U.S. gas supply and demand conditions, it is likely that the level of the export price will continue to be a damper on export sales until prices for alternatives, including indigenous U.S. gas, move closer to the Canadian export price.

III FINDINGS

Assuming the announced increases in the OPEC prices for crude oil and the expected increases in international tanker rates materialize during 1979, the substitution value for Canadian natural gas exports by the end of 1979 will be $2.51 per MMBtu. The substitution value in February, 1979, taking into account the 5 per cent OPEC price increase already implemented, is $2.30 per MMBtu, some $0.14 per MMBtu above the current export price.

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With the passage of the U.S. Natural Gas Policy Act, and the resultant freeing of intrastate gas reserves previously withheld from the interstate market, United States gas markets are going through an adjustment process and it will take some months before clear trends become discernible. It appears that the pricing criterion for gas to be sold to industrial users, arising from the U.S. Natural Gas Policy Act, will be based upon the prices of #2 and #6 fuel oils. U.S. authorities have not yet clarified the application of those sections of the Natural Gas Policy Act dealing with new natural gas imports, although statements by the U.S. Secretary for Energy indicate that the price criterion for new imports will not be higher than residual fuel oil on the basis that this is the energy source that would be displaced. One could therefore argue that precipitative action on gas export pricing should be avoided. On the other hand, the cost to Canada for imported oil has risen, such that the current export price, on the basis of its substitution value, is now too low. The U.S. government has agreed to the substitution value concept for pricing of Canadian natural gas exports, and on using the Btu equivalency of Saudi Arabian crude oil to determine that value.

In the short run, it is doubtful whether the soft market situation for Canadian gas in the U.S. will change, and a further increase in the export price at this time could lead to further erosion. However, international energy developments,

including the OPEC price increases and the disruptions in Iranian supplies should bring about upward pressures on United States average oil prices, which would improve the competitive position of gas versus oil, and thereby strengthening the demand for Canadian gas. Furthermore, the ceiling price for certain categories of new gas in the United States to be produced from conventional sources will increase from a January level of $2.09 to $2.16 in April 79. On balance it is unlikely that the existing export markets will be adversely affected, however contracts for any potential new exports may be more difficult to secure, particularly for short term periods, if the current export price increases.

In light of the price increases announced by OPEC for 1979 and the other related factors which would affect the landed cost of Saudi Arabian light crude oil, recognizing the consequent impact of these developments on the substitution value of Canadian natural gas exports, and giving consideration to the current and anticipated short term gas market situation in the United States, the Board finds that the current price of $2.16 per MMBtu should be increased to reflect the increase of 5 per cent in the price of crude oil implemented on 1 Janaury 1979.

The Board would exempt licence GL-29 from this recommendation. The only viable alternative fuel in the Northern Minnesota industrial market served by Inter City Gas is coal. In the view of the Board the export price applicable to GL-29 should be less than the recommended price for other licences in recognition of

the unique circumstances in which almost all of the gas exported is consumed by one customer, the Boise Cascade paper mill at International Falls, Minnesota.

IV RECOMMENDATIONS

In accordance with its obligation under Section 11A of the National Energy Board Part VI Regulations, the Board makes the following recommendation to the Governor in Council for the pricing of Canadian natural gas exports:

> The Board recommends that the price of natural gas exported each month under all licences, except GL-29, be increased to \$2.30(U.S.) per MMBtu which is \$2.14367(U.S.) per gigajoule. The export price for GL-29 should continue at the level approved by the Governor in Council Order PC278-77-CR dated June 16, 1977, i.e. \$2.00(U.S.) per MMBtu which is \$1.86406(U.S.) per gigajoule.
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> In order to allow time for U.S. Regulatory action, the recommended price change should be effective 60 days after approval is granted by the Governor in Council.

V EFFECT OF RECOMMENDATION

As a result of this recommendation, and assuming the current level of exports is maintained, there would be some $140 million (U.S.) additional revenue from natural gas exports, bringing the total value of natural gas exports to about $2.3 billion (U.S.) annually.

All of which is respectfully submitted.

J. G. Stabback

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I BACKGROUND

Since 1974, the Board has conducted a series of reviews of the price of natural gas being exported from Canada under existing licences. These reviews were conducted by the Board under Section 11A of the Regulations made pursuant to Part VI of the National Energy Board Act, adopted in 1970, which requires the Board to maintain surveillance of border prices after a licence has been issued, and where in the opinion of the Board, there has been a significant increase in the price of alternative energy sources, to report its findings to the Governor in Council.

In its April 1977 report, the Board introduced the concept of "substitution value" as the main criterion for determining the appropriate selling price for Canadian natural gas in export markets as represented by the cost of displacing imported crude oil in eastern Canada with Canadian natural gas. This concept has been accepted by United States authorities during intergovernmental discussions on the pricing of natural gas imported from Canada. In addition,

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* All prices in this report are quoted in United States dollars.

the Board recommended that the export price be specified in United States dollars in order to eliminate the adverse effect on export revenues of the decline in the value of the Canadian dollar.

In calculating the substitution value the Board used for the value of crude oil imported into eastern Canada, Saudi Arabian light crude oil (34° A.P.I. with 1.7 per cent sulphur) or "marker crude" as it is generally known. This particular crude oil is an internationally accepted reference crude oil and its estimated landed value in Canada in the past has been a satisfactory representative of the cost of the offshore oil mix that was actually imported.

During 1978, world oil prices remained unchanged and the Board in two separate reviews prepared in February and September, 1978, concluded that no change in the current export price of $2.01 per GJ ($2.16 per MMBtu) for Canadian natural gas exports was warranted.

In February of this year, the Board recommended to the Governor in Council that the price of natural gas exported each month under all licences, except GL-29 which was recommended to remain at $1.86406 per GJ ($2.00 per MMBtu), be increased to $2.14367 per GJ ($2.30 per MMBtu) to reflect the first of a four-stage increase in the price

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of Saudi Arabian light crude oil announced by OPEC on December 16, 1978. The first increase was reflected by an increase of about six and one half per cent in export price of natural gas and became effective on May 1, 1979.

II CONSIDERATIONS

In order to keep under review the reasonableness of the selling price for Canadian gas in export markets, the Board maintains a continuing surveillance over international energy developments, the cost to Canadians of foreign crude oil imports, the selling price of alternative energy sources in the gas export markets; and in the context of the marketability of Canadian gas, is monitoring the impact of the United States Natural Gas Policy Act of 1978 on the supply and price of natural gas in intrastate and interstate markets.

In light of Canadian Government policy regarding the use of the substitution value concept for determining the price of currently approved exports of natural gas from Canada, the most important considerations appear to be the following:

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(a) Price Increase of OPEC Crude Oils

The February recommendations by the Board were based on the assumption that increases in the price of marker crude would be implemented in an orderly manner as announced, and would be representative of OPEC prices actually being paid. However, in March, 1979, OPEC implemented a further eight and one half per cent increase in the price of marker crude thereby moving forward to April 1, 1979 the price increase to $14.54 per barrel originally scheduled for October 1, 1979.

Since February, in addition to the formal OPEC price increases, most OPEC members have been charging "premiums" for quality or "surcharges" over and above the official selling prices in order to take advantage of the tight oil market conditions caused by the Iranian supply situation.

(b) Effect of OPEC Price Increases on Substitution Value

In the past, the Board has used the price of Saudi Arabian light crude as a reference world crude oil price in determining the substitution value for

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natural gas exported to the United States under existing licences. Since there is a wide variance between the average delivered cost of crudes that are now being imported into Canada and the price of Saudi Arabian light crude, its landed cost no longer provides a reasonable representative value of the substitution value of Canadian natural gas. The substitution value based on marker crude is calculated to be equivalent to $2.33 per GJ ($2.51 per MMBtu) whereas the value based on average imported delivered cost for February to April loadings for delivery to Portland, Maine, comes to $2.61 per GJ ($2.80 per MMBtu), a difference of 28 cents per GJ (29 cents per MMBtu). Furthermore, the average imported delivered cost at Portland, Maine, reflects all announced increases by OPEC countries of the price of crude oil to June 1, 1979 only.

Suffice to say the present basis of determining the substitution value of Canadian crude oil using marker crude as the index would not recover the full cost of crude oil imports into Canada. This situation may be somewhat corrected during the forthcoming OPEC meeting later this month. It is possible that a

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decision will be made to stabilize the current pricing structure by incorporating the existing premium and surcharges into a new marker crude price.

(c) International Tanker Rates

The international tanker rates which have a direct influence in the determination of substitution value, were expected to change significantly during 1979. However, in the first half of the year the freight rates from the Persian Gulf to Portland, Maine, have remained relatively stable.

III MARKETABILITY OF CANADIAN GAS IN EXPORT MARKETS

(a) General Market Conditions

The current export price for Canadian gas of \$2.14367 per GJ (\$2.30 per MMBtu) is, at the present time, just slightly more than the cost of new indigenous supply in the United States. Pursuant to the United States Natural Gas Policy Act of 1978, the Federal Energy Regulatory Commission has prescribed the field price ceiling for new natural gas to be sold in the month of July 1979 at

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$2.22 per MMBtu ($2.07 per GJ). After allowance for transmission charges, Canadian gas priced at $2.30 per MMBtu ($2.14367 GJ) at the border would in some locations be no more costly than new production from the prime producing areas of Texas, Oklahoma and Louisiana.

Alternative energy prices are, however, increasing quite rapidly in line with world prices, particularly oil. In March 1979, the United States "refiner acquisition cost" of imported crude oil was $16.39 per bbl (including import tax) compared to the average $14.98 per bbl paid by eastern canadian refineries for imported oil. Similarly, #2 and #6 fuel oil prices have been steadily increasing in certain key metropolitain areas of the United States where wholesale #2 fuel oil contract prices are reported to be approaching $0.60 per gallon. For example, in the Pacific Northwest (Seattle), where Canadian export sales have been depressed, the minimum #2 fuel oil price has risen to an equivalent of $3.21 per MMBtu ($2.99 per GJ) at the wholesale level and $4.04 ($3.77 per GJ) at retail level.

Furthermore, recent reports on #2 fuel oil commodity futures indicate that contracts are being signed for delivery during the July through February period at about $0.90 per gallon. At such levels, United States consumers are not

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likely to switch to petroleum products as an alternative to rising natural gas prices; rather, current oil consumers are more likely to switch to natural gas. Thus there should be little diminution of demand for exported Canadian gas priced at world crude oil Btu equivalent, especially in markets where the cost of Canadian gas is rolled-in with the cost of United States gas.

The only likely major problem area could be Pacific Northwest served by Licence GL-41 where short term inter-fuel pricing competition from locally produced low cost electric power and heavy fuel oil derived from Alaska crude, is being keenly felt. Although there have been significant losses in these markets to heavy fuel oil, some further market deterioration in these markets could result from a significant increase in price. The potential, however, for increased off-line sales to other market areas in the south west United States could modify the effect on the level of exports from British Columbia.

With passage of the Natural Gas Policy Act of 1978, some 700 Bcf to 1 Tcf of surplus annual deliverability from the intrastate markets (mainly Texas, Oklahoma and Louisiana) has become available to other areas of the United States. This has resulted in a temporary gas supply "bubble" or imbalance in the short-term supply/demand which some experts

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have suggested may last two to three years, although more recent indications are that this bubble will be eliminated within one year. It is noted that United States authorities are now encouraging the substitution of natural gas for imported fuel oil in support of their oil displacement efforts, contrary to the intent of the Power Plant and Industrial Fuels Act of 1978 which restricted the use of gas as industrial boiler fuel.

To the extent that the near-term choice for existing boiler plants is limited to fuel oil or natural gas, the United States energy policy appears to favour the use of gas in lower priority uses in an effort to cushion the effect of increasing world oil prices. The degree of such substitution and its resultant effect on the demand for Canadian gas will be determined by the size and duration of the short-term surplus in indigenous United States gas supply.

(b) Special Pricing for GL-29

In March 1979, the Board requested ICG Transmission Ltd. to file a competitive fuels pricing survey for the market area served by export Licence GL-29. The reasons for obtaining up-to-date pricing information were three-fold:

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1. To determine if this export licence still justifies special consideration with respect to the export price (which arose originally because of unique circumstances in which about 92 per cent of the gas export is consumed by one customer, the Boise Cascade paper mill at International Falls, Minnesota). The export price for this licence was fixed at $1.86406 GJ ($2.00 per MMBtu) on May 1, 1979 which was $0.28 per GJ ($0.30 per MMBtu) below the price set for other export licences;

2. To determine if any change has occurred in the market shares of competing fuels in the area served by Licence GL-29 since the last report to the Board in 1978;

3. To obtain a measure of the price increases for alternative energy sources since the last report.

The primary alternative fuel in the Northern Minnesota industrial market served by Licence GL-29 continues to be coal. The new information filed by ICG indicates that there is virtually no change in the market shares held by

competing energy sources and furthermore the average price of coal for industrial use has declined approximately 23 per cent in the last year. In 1978, ICG reported a price of $1.62 per MMBtu for coal whereas the recent information filed by ICG indicates a price of $1.25 per MMBtu. Information obtained independently confirms that a contract for an industrial sale of Montana lignite coal, signed earlier this year, was at $1.34 per MMBtu, using unit train delivery. These coal prices do not, however, include in-plant handling charges, estimated at $0.25 per MMBtu, and associated environmental costs of up to $1.00 per MMBtu if mandated by local authorities.

The volume of gas exported under Licence GL-29 is less than one per cent of the total amount of gas exported annually to the United States. In establishing an appropriate export price for this particular licence, the Board has in the past given recognition to the principles of border accommodation (the Boise plant is, in part, located in Fort Frances, Ontario). The pipeline system supplying this load serves communities on both sides of the border, and the loss of the largest single customer could affect the cost of service for Canadian consumers.

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(c) Proposed Sale of Mexican Gas to the United States

The Mexican National Oil and Gas Corporation (Pemex) negotiated in 1977 with six United States importers to sell up to two billion cubic feet per day of gas at a United States border price of $2.60 per MMBtu ($2.42 per GJ). Initial deliveries were to be one billion cubic feet daily, expanding later to two billion. The base price under the contract was to be indexed to the Btu equivalency of #2 fuel oil refined from world-priced crude, landed in New York harbour. Approval of this import was stalled by the United States authorities primarily due to the contract price, which was felt to be too high.

Interest in importing Mexican gas has once again been revived, mainly due to the impact of the Iranian situation. Its price, based on the original terms of Btu equivalency to #2 fuel oil, would be in the range of $3.43 to $3.87 ($3.20 to $3.61 GJ). Negotiations are still underway with the price being the main outstanding item, however, it would appear that the United States does not contemplate large volume gas imports from Mexico until such time as arrangements to move Alaskan gas to the lower 48 States has been finalized.

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(d) United States Criteria for Pricing New Imports of Gas

It would appear that the United States uses, as one test for the price of new gas imports, the criterion of the delivered price of #6 fuel oil derived from OPEC crude. This is regarded as the marginal source of supply. Although historically the price of #6 fuel oil and crude have been about the same level, the price of #6 fuel oil has, in some areas, been temporarily below the price of crude due to over-supply. This situation, however, is not expected to continue.

The average United States refiner imported crude oil acquisition cost, which was $16.39 per bbl or $2.83 per MMBtu ($2.64 per GJ) in March, should be significantly higher now due to further price increases implemented in the interim.

It would appear, therefore, that by mid year the substitution value for Canadian gas, calculated to be $2.61 per GJ ($2.80 per MMBtu) on the basis of June 1st selling prices, will result in a Btu equivalent price of Canadian gas exports somewhat lower than the cost of current imports of oil into the United States.

IV FINDINGS

The Board finds that since the beginning of the year, the actual delivered cost of imported crude into Canada

has risen sharply from the 1978 level, partly due to decisions by OPEC to increase the price of marker crude, and partly from unilateral decisions by individual OPEC members to levy additional surcharges and market premiums. In the past, the Board has used the price of marker crude as a reference world crude oil price in determining the substitution value for natural gas exported to the United States under existing licences. Since there now exists a wide variance between the average delivered cost of crudes that are actually imported into Canada and the price of marker crude, the Board finds that the substitution value based on the price of marker crude does not provide an accurate measurement of the value of Canadian natural gas exports.

While the Board has some concern about the short-term marketability of Canadian export gas and the current soft market situation in certain regions of the United States, it is felt that this situation should shortly resolve itself. International energy developments, including the large OPEC price increases with additional premiums and surcharges and the dislocations in world supplies are bringing upward pressures on United States average oil prices, improving the competitive position of gas versus

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oil, and thereby strengthening the requirements for supplies of Canadian gas. Furthermore, the ceiling price for certain categories of new gas to be produced from conventional sources in the United States will continue to increase.

With the passage of the United States Natural Gas Policy Act, and the resultant freeing of intrastate gas reserves previously withheld from the interstate market, United States gas markets are going through an adjustment process and it will take some months before clear trends become discernible. However, it appears that the pricing criteria for gas to be sold to industrial users, arising from the United States Natural Gas Policy Act, will be based upon the prices of #2 and #6 fuel oils. At the same time, United States authorities have not yet finalized the application of those sections of the Natural Gas Policy Act dealing with the pricing structure which will apply to new natural gas imports.

In light of the large price increase implemented so far this year by OPEC, including the premium and surcharges, the Board is of the opinion that the method of determining the substitution value of Canadian gas exports based upon the marker crude price is currently not appropriate. The prospects for continuing instability in

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world crude oil markets are strong. The Board therefore finds that until there is a return to a more stable pricing structure in world crude marketing whereby the price of the marker crude more realistically reflects OPEC prices, the actual cost of crude oil imported into Canada is the most appropriate base for the determination of the substitution or replacement value of Canadian natural gas exports.

On the basis of our calculations, taking into account the official selling prices for crude oil so far during the month of June 1979, the Board finds that the current export price should be increased to $2.61 per GJ ($2.80 per MMBtu).

The substitution value is defined as the natural gas Btu equivalent of imported crude oil at Toronto, in United States dollars, calculated on the basis of the actual average F.O.B. cost of crude oil loadings for delivery to Canada via Portland, Maine[(1)] plus ocean freight and adjusted for the related pipeline transportation costs within the United States and Canada.

It is the view of the Board, however, that the export price applicable to exports under Licence GL-29 should, at this time, continue to be less than the recommended price

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(1) Source: EM&R, Petroleum Compensation Board

for other licences in recognition of the unique circumstances in which virtually all of the gas exported is consumed by one customer, the Boise Cascade paper mill at International Falls, Minnesota. Given the significant rise in the cost to Canada of importing its crude oil requirements, however, it is becoming increasingly difficult to justify a continuation of this policy. Nevertheless, the Board feels that for the time being the current price differential of $0.28 per GJ ($0.30 per MMBtu) should be maintained.

VII RECOMMENDATIONS

In accordance with its obligation under Section 11A of the National Energy Board Part VI Regulations, the Board makes the following recommendation to the Governor in Council for the pricing of Canadian natural gas exports:

> The Board recommends that the price of natural gas exported each month under all licences, except GL-29, be increased to $2.61 per GJ which is $2.80 per MMBtu (see page 19 Table I). The export price for gas exported under Licence GL-29 should be increased to $2.33 per GJ which is $2.50 per MMBtu.

In order to allow sufficient lead time for United States regulatory action, the recommended price changes should be effective no sooner than 60 days after approval is granted by the Governor in Council.

VIII EFFECT OF RECOMMENDATION

As a result of this recommendation, and assuming the current level of exports is maintained, there could be some $440 million additional revenue from natural gas exports, bringing the total value of natural gas exports to about $2.5 billion annually.

All of which is respectfully submitted.

J. G. Stabback

C. G. Edge

TABLE I

Licence Holder	Licence Number (GL)	1978 Exports (Bcf)	Border Prices U.S. $ per GJ Effective 1 May 79	Recommended 1 August 79
			(U.S.$)	(U.S.$)
Alberta & Southern	3,16,24,35	345.1	2.14367	2.61
Canadian Montana	5,17,25,36	28.1	2.14367	2.61
ICG Transmission	29	6.4	1.86406	2.33
	28	0.3	2.14367	2.61
Niagara Gas (2)	6	6.2	2.14367	2.61
TransCanada (1) (2)	1,18,39	116.4	2.14367	2.61
	20	31.9	2.14367	2.61
	37	71.3	2.14367	2.61
	38	18.3	2.14367	2.61
	19	4.2	2.14367	2.61
Westcoast	4	39.5	2.14367	2.61
	41	209.6	2.14367	2.61

Note: (1) Small quantities of natural gas exports used for pipeline fuel under Licence GL-43 will be priced at the same price as all other volumes exported by TransCanada at Emerson, Manitoba for consumption in the United States, namely $2.61 per gigajoule (GJ).

(2) The small volumes of peaking gas exported pursuant to licences GL-6 and GL-19 shall continue to be priced in accordance with the terms of the existing "peaking contracts" as approved by the Board.

CANADA

NATIONAL ENERGY BOARD

REPORT TO

THE GOVERNOR IN COUNCIL

In the Matter of the Pricing of Natural Gas
Being Exported under Existing Licences

September 1979

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I   BACKGROUND

Since 1974, the Board has conducted a series of reviews of the price of natural gas being exported from Canada under existing licences. These reviews were conducted by the Board under Section 11A of the Regulations made pursuant to Part VI of the National Energy Board Act, adopted in 1970, which requires the Board to maintain surveillance of border prices after a licence has been issued, and where in the opinion of the Board, there has been a significant increase in the price of alternative energy sources, to report its findings to the Governor in Council.

During the period from July 1974 to April 1977, in which the world oil pricing situation was relatively stable, the Board issued four Reports to the Governor in Council approximately one year apart.

During 1978, world oil prices remained unchanged and in two separate internal reviews, undertaken in February and September of that year, the Board concluded that no change in the then current export price of \$2.01 per gigajoule (GJ), (\$2.16 per MMBtu), for Canadian natural gas was warranted and as a consequence no Report was made to the Governor in Council during that year.

So far during 1979 increasing instability in world crude oil markets has resulted in rapid and unscheduled increases in the cost to Canada of importing its offshore

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NOTE:

All prices in this report are quoted in United States dollars.

crude oil requirements, necessitating more frequent reviews and Reports to the Governor in Council.

In its Report dated February 1979, the Board recommended an export price of $2.14 per GJ ($2.30 per MMBtu) to reflect the first of a four-stage increase in the price of crude oil in 1979 announced by OPEC on 1 December 1978.

However, in March 1979 OPEC implemented a further increase which had the effect of moving forward to 1 April 1979 the fourth stage of the announced increase. In addition most OPEC members began charging premiums and surcharges over and above the official selling prices in order to take advantage of the tight market conditions occasioned by the Iranian supply situation.

In June of this year, the Board recommended to the Governor in Council that the price of natural gas exported each month under all licences, except GL-29, be increased to $2.61 per GJ which is $2.80 per MMBtu. The export price for gas exported under Licence GL-29 was recommended to be increased to $2.33 per GJ which is $2.50 per MMBtu.

The Boards recommendations, approved by the Governor in Council, went into effect on 11 August 1979.

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The recommendations contained in the Board's June Report were made prior to the OPEC meetings of that month. The Board was aware that further substantial increases in the OPEC price of oil were imminent; however the size of the increases and their impact on the overall cost of Canada's crude oil imports could not be assessed at that point in time. The recommendations contained in that Report reflected only the increases which had taken place since its previous February Report.

II CONSIDERATIONS

In order to keep under review the reasonableness of the selling price for Canadian gas in export markets, the Board maintains a continuing surveillance over international energy developments, the cost to Canadians of foreign crude oil imports, and the selling price of alternative energy sources in the market areas to which Canadian natural gas is exported.

Although in recent reports much emphasis has been placed upon the use of the substitution value concept in determining the appropriate selling price for Canadian natural gas exports it is not the sole criterion on which the Board's recommendations are based. The most important considerations at this juncture appear to be the following:

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(a) Price Increase of OPEC Crude Oils

At the June 1979 OPEC meeting member nations announced, absent a formal agreement, that for a three-month period official selling prices for crude oil would range from a low of \$18.00 to a high of \$23.50 per barrel. Accordingly, the estimated average imported delivered crude cost for delivery to Eastern Canada via Portland, Maine adjusted to reflect the official selling prices as of August 1, 1979 has increased substantially since the Boards last report. The Board now determines that the substitution value of natural gas based on foreign crude oil imports into Canada is \$3.22 per gigajoule or \$3.45 per MMBtu.

(b) Alternative Energy Prices in the United States

In determining the competitiveness of Canadian natural gas in United States markets it is assumed that petroleum products, number 2 and 6 fuel oil, are its prime alternatives.

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Since early in May United States refinery gate and/ or terminal posted prices have risen dramatically. For example, in a three month period, #2 fuel oil prices on the United States west coast have risen an estimated 47 per cent while #6 fuel oil prices have advanced 24 per cent. In the United States midwest increases are in the order of 23 per cent for #2 fuel oil and 14 per cent for #6 fuel oil. The wholesale posted price for #2 fuel oil in many areas where Canadian gas is sold has reached a high of $0.70 per gallon or $4.73 per GJ ($5.07 per MMBtu). Prices for #6 fuel oil are in the $2.80 per GJ ($3.00 per MMBtu) range.

The New York harbour posted price for low sulphur #6 fuel oil is currently quoted in the range of $3.50 to $3.63 per GJ ($3.75 to $3.90 per MMBtu).

(c) Proposed Sale of Mexican Gas to the United States

Negotiations between the United States and Mexico for the purchase of a portion of Mexico's production are continuing.

If these negotiations result in an export price for Mexican gas substantially different than that for Canadian gas exported to the United States, the Board would wish to take that fact into consideration in its next review of export prices.

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III MARKETABILITY OF CANADIAN GAS IN EXPORT MARKETS

As world oil prices rise, an all out effort is being made in the United States to reduce its dependence on OPEC crude oil and products produced from OPEC crude oil, particularly #6 fuel oil. This development coincident with an increasing spread between oil and gas prices in the market place, due to the regulatory lag, will result in a substantial increase in natural gas sales. Thus Canadian gas will not be subject to curtailment, particularly by companies with the ability to roll in their cost of Canadian gas with lower cost indiginous supplies. Some specific markets may be adversely affected but the opportunity for transmission companies to negotiate offline sales to other resellers should ameliorate these situations.

In the Board's Report of June last, considerable explanation was given with respect to the special circumstances regarding exports made under licence GL-29. No change has taken place since that review.

IV FINDINGS

The Board finds that since its last report, the delivered cost of imported crude oil into Canada has risen sharply from its 1 June 1979 level due to unilateral decisions by some OPEC nations to levy surcharges and premiums over

official prices and, more recently, the announcement following the June OPEC meeting to set increases in a range of $18.00 to $23.50 per barrel.

Furthermore, the Board is of the opinion that an increase in the export price of Canadian gas to the equivalent of the substitution value of Canadian imports of foreign crude oil generally will not result in consumer prices in United States markets greater than the prices for oil products. Thus the current level of Canadian gas exports should not be affected particularly in those areas where the price of Canadian gas can be rolled in with indigenous supplies.

The Board is of the opinion that the Canadian natural gas export price should be increased to $3.22 per GJ ($3.45 per MMBtu), except for GL-29 which should maintain its present differential of $0.28 per GJ ($0.30 per MMBtu) below other licences.

In view of the fact that this increase amounting to $0.61 per GJ ($0.65 per MMBtu) follows closely upon the effective date of 11 August 1979 for the previous increase of $0.47 per GJ ($0.50 per MMBtu) and the time needed for regulatory proceedings in the United States, the Board is of the opinion that the effective date for recommendation contained herein should be 60 days after approval is granted by the Governor in Council.

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V RECOMMENDATIONS

In accordance with its obligation under Section 11A of the National Energy Board Part VI Regulations, the Board makes the following recommendation to the Governor in Council for the pricing of Canadian natural gas exports:

> The Board recommends that the price of natural gas exported each month under all licences, except GL-29, be increased to $3.22 per GJ which is $3.45 per MMBtu (see page 10, Table I). The export price for gas exported under Licence GL-29 should be increased to $2.94 per GJ which is is $3.15 per MMBtu.
>
> In order to allow sufficient lead time for United States regulatory action, and to reduce the impact of this increase which follows so closely upon the previous increase, the recommended price changes should be effective no sooner than 60 days after approval is granted by the Governor in Council.

VI EFFECT OF RECOMMENDATION

As a result of this recommendation, and assuming the 1978 level of exports is maintained, there could be some $570

million additional revenue from natural gas exports, bringing the total value of natural gas exports to about $3.0 billion annually.

All of which is respectfully submitted

TABLE I

Licence Holder	Licence Number (GL)	1978 Exports (Bcf)	Border Prices (U.S. $ per GJ) Current	Recommended
Alberta and Southern	3,16,24,35	345.1	2.61	3.22
Canadian Montana	5,17,25,36	28.1	2.61	3.22
ICG Transmission	29	6.4	2.33	2.94
	28	0.3	2.61	3.22
Niagara Gas (2)	6	6.2	2.61	3.22
TransCanada (1) (2)	1,18,39	116.4	2.61	3.22
	20	31.9	2.61	3.22
	37	71.3	2.61	3.22
	38	18.3	2.61	3.22
	19	4.2	2.61	3.22
Westcoast	4	39.5	2.61	3.22
	41	209.6	2.61	3.22

Note: (1) Small quantities of natural gas exports used for pipeline fuel under Licence GL-43 will be priced at the same price as all other volumes exported by TransCanada at Emerson, Manitoba for consumption in the United States, namely $3.22 per gigajoule (GJ).

(2) The small volumes of peaking gas exported pursuant to licences GL-6 and GL-19 shall continue to be priced in accordance with the terms of the existing "peaking contracts" as approved by the Board.

CANADA

NATIONAL ENERGY BOARD

REPORT TO
THE GOVERNOR IN COUNCIL

In the Matter of the Pricing of Natural Gas
Being Exported under Existing Licences

January 1980

NATIONAL ENERGY BOARD

REPORT TO THE

GOVERNOR IN COUNCIL

IN THE MATTER OF THE PRICING OF
NATURAL GAS BEING EXPORTED
UNDER EXISTING LICENCES

JANUARY 1980

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I BACKGROUND

Since 1974, the Board has conducted a series of reviews of the price of natural gas being exported from Canada under existing licences. These reviews were conducted by the Board under Section 14 (formerly Section 11A) of the Regulations made pursuant to Part VI of the National Energy Board Act, adopted in 1970, which requires the Board to maintain surveillance of border prices after a licence has been issued.

(a) Present Basis of Establishing the Export Price of Natural Gas

In 1975, the United States Administration requested that Canada set a uniform export price at the international boundary. This was agreed to and has been in effect since that time with the exception of one small Licence, GL-29, where special circumstances prevail, and two "peaking" contracts.

At that time the United States accepted, with some reservations, that the price at the international border be based on the substitution value of crude oil imported into Eastern Canada. This is calculated by taking the cost of imported oil at Montreal, adding the oil toll from Montreal to Toronto, deducting the cost of transmitting gas from Alberta to Toronto and adding on the average cost of transmitting Canadian gas to the international

boundary. The resultant price is somewhat below the GJ (Btu) equivalent of OPEC oil landed in Eastern Canada.

This basis of establishing the price of gas at the international boundary has been in effect since that time. However, subsequent to the Board's last review in September, the United States Secretary of Energy, Mr. Charles Duncan, in a letter dated September 21, 1979 to the Minister of Energy, Mines and Resources, proposed a system of discount export pricing. This concept of a discount pricing mechanism would be a border price ceiling based on a replacement cost formula, similar to the methodology currently employed, with an absolute cap not to exceed the border price of any other pipeline imports into the United States, with lower prices if necessary for certain regions. The Board has considered Secretary Duncan's proposal in this Report and has examined its impact on Canada and the other matters relevant to the export pricing of natural gas.

(b) Changing Oil Prices and their Effect on the Export Price of Natural Gas

During the period from July 1974 to April 1977, in which the world oil pricing situation was relatively stable, the Board issued four Reports

to the Governor in Council approximately one year apart and the price of gas increased from $0.93 per gigajoule (GJ), ($1.00 per MMBtu)* to $2.01 per gigajoule (GJ), ($2.16 per MMBtu).

During 1978, world oil prices remained unchanged and the Board concluded that no change in the then current price of $2.01 per gigajoule (GJ), ($2.16 per MMBtu), for Canadian natural gas was warranted. As a consequence no Report was made to the Governor in Council during that year.

During 1979, the increasing instability in world crude oil supply and the rapidity of world oil price changes necessitated three (3) reviews and Reports to the Governor in Council.

In its Report dated February 1979, the Board recommended an export price of $2.14 per GJ ($2.30 per MMBtu) to reflect the first of a four-stage increase in the price of crude oil in 1979 announced by OPEC on 1 December 1978. This increase went into effect in May 1979.

However, in March 1979 OPEC implemented a further increase which had the effect of moving forward to 1 April 1979 the fourth stage of the announced increase. In addition, most OPEC members began charging premiums and surcharges over and above the

* All prices in this report are quoted in United States dollars.

official selling prices in order to take advantage of the tight market conditions occasioned by the Iranian supply situation.

In June 1979, the Board recommended to the Governor in Council that the price of natural gas exported each month under all licences, except GL-29, be increased to $2.61 per GJ ($2.80 per MMBtu). The export price for gas exported under Licence GL-29 was recommended to be increased to $2.33 per GJ ($2.50 per MMBtu). These changes went into effect in August 1979.

In September, as a result of further increases in the price of OPEC oil, the Board recommended that the price of natural gas exported to the United States be increased to $3.22 per GJ ($3.45 per MMBtu) for all licences except GL-29. The export price of gas exported under GL-29 was recommended to increase to $2.94 per GJ ($3.15 per MMBtu). The Board's recommendations approved by the Governor in Council, went into effect on 3 November 1979.

Further substantial increases in OPEC oil prices were announced after the OPEC meeting in Caracas, Venezuela, held in December 1979, but from the lack of consensus exhibited by the OPEC members it is clear that there is considerable instability in OPEC oil prices. This is further evidenced by subsequent

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day to day announcements being made by member countries concerning their new official selling prices.

(c) Proposed Sale of Mexican Gas to the United States

Another event in 1979 having a bearing on the Canadian export price was the conclusion of an agreement to export Mexican natural gas to the United States. Negotiations between Pemex and six United States pipeline companies resulted in an export "base" price of $3.38 per GJ ($3.625 per MMBtu) which became effective 1 January 1980. The Mexican agreement calls for the sale of 300 MMcf per day and represents about one-eighth of the volumes being exported from Canada.

The base price would be escalated at quarterly intervals on the basis of a percentage increase in the average price of a designated mix of five reference world crudes.

Since the signing of the Mexican agreement in October 1979 and before the price in that agreement came into effect on 1 January 1980, large increases in price of OPEC oil have occurred.

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II SUBSTITUTION VALUE OF CANADIAN NATURAL GAS AT 1 JANUARY 1980

At the December 1979 OPEC meeting, member countries announced, absent a formal agreement, that crude oil price would range from a low of $24.00 to a high of $34.50 per barrel. Saudi Arabian oil prices increased from $18.00 to $24.00 or by one-third, and other countries by greater percentages. Accordingly, the weighted average imported delivered crude cost for delivery to Eastern Canada via Portland, Maine, based on the official selling prices as of 1 January 1980, has increased substantially since the Board's last report. The Board has now determined that the substitution value of natural gas based on foreign crude oil imports into Canada is $4.17 per gigajoule (GJ), ($4.47 per MMBtu).

III CONSIDERATIONS CONCERNING THE EXPORT PRICE OF CANADIAN NATURAL GAS

Extensive discussions have been held with various United States interest groups subsequent to the last price increase to $3.22 per GJ ($3.45 per MMBtu), but prior to the recent very large OPEC oil price increases. At that time, considerable concern was expressed to the Board about the size and rapidity of recent increases in the price of Canadian natural gas. This concern was particularly acute in the Pacific Northwest and the State of Montana where special circumstances exist. Representations with respect to these regions were made by Governors, State Public Utility Commissions, natural gas distributors and pipeline companies. These were mainly to

request discount prices within the context of the letter from Secretary Duncan mentioned earlier. On the other hand, there were other regions and United States interests which urged the maintenance of the single border price in order to avoid discrimination. Within congressional interests there were views for and against discount pricing.

The recent very large OPEC increases exacerbate the situation, but Canada is having to bear these increases, which have undoubtedly raised the value of natural gas.

The subject will be discussed first from the viewpoint of what the general price should be, and secondly, whether price discounts should prevail for certain regions.

(a) General Price Level for Exports of Natural Gas

The marginal cost of energy for both the United States as a whole and for Canada continues to be the cost of imported oil. Since OPEC oil is insecure and Canadian natural gas is secure in supply and a premium fuel, it would appear to follow that there will continue to be markets available to Canadian natural gas at prices roughly equivalent to the GJ (Btu) equivalent of the cost of imported crude oil.

The present substitution value of Canadian gas of $4.17 per gigajoule (GJ) ($4.47 per MMBtu) is not out of line with various prices for new non-conventional sources of natural gas, and the anticipated price of Alaska gas delivered to United States markets.

There are, however in the U.S., specific market adjustment considerations which need to be borne in mind. At the present price of $3.22 per gigajoule (GJ), ($3.45 per MMBtu), Canadian gas has been losing market share to low cost indigenous coal for industrial uses and low cost hydro-generated electricity for residential use and in the Pacific Northwest to low cost high sulphur fuel oil. A large increase in the price of Canadian gas would accelerate this loss of market share in those regions where the alternative fuels discussed above are available. This will mean that some Canadian gas might need to seek new markets. While the general proposition is true that provided the price of Canadian gas is not higher than the marginal cost of energy to the United States as a whole (i.e., the cost of OPEC oil), markets should be available to Canadian gas, although this may not happen automatically. United States market imperfections for natural gas could slow or inhibit a rearrangement of sales of Canadian gas from those markets where it is overpriced to those where it can be sold at the going price.

On the one hand, the process is aided by the practice of rolling-in or averaging gas from different sources into a single price, but the effect of this varies from region to region depending on the proportion of Canadian gas sold. On the other hand, the process is impeded because OPEC oil is rolled-in with lower cost indigenous crude oil and the resultant price of No. 2 and No. 6 fuel oils may be less than the price of Canadian natural gas.

In addition, the approach to natural gas pricing in the United States, such as incremental pricing under the recent Natural Gas Policy Act, is still evolving, and this together with new approaches to rate making within State Commissions, is causing uncertainty on precisely what the marginal costs are in any particular market area.

Transferring volumes of gas from one market area to another (eg., from the Pacific Northwest to California) requires the approval of the United States Federal Energy Regulatory Commission and these proceedings take time. In addition, debottlenecking of pipeline systems to move the new volumes might be necessary. The willingness of the pipeline companies to do this depends on the degree of permanence of the transfer and its economic attractiveness to the pipeline company, and again, regulatory proceedings are necessary. Political factors could also impede the process.

In summary, a much higher Canadian price for natural gas would speed up the need for market adjustments. While these could be made, they would not be automatic, they are not easy and take time.

From a Canadian standpoint, the export price of natural gas is slightly below the GJ (Btu) equivalent of crude oil imported into Eastern Canada. Moreover, natural gas is a scarce natural resource and the replacement of the gas will ultimately have to come from high-cost non-conventional sources. Furthermore, the governments of the producing provinces have indicated that they are not in favour of exporting natural gas at this time at a price below its substitution value.

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It would, therefore, appear to be in Canada's interest not to export a scarce non-renewable resource, natural gas, at a price below its substitution value.

(b) Should there be Price Discounts in Special Circumstances

The request for special discounts in certain regions appears to be based on the availability of other fuels, usually indigenous ones at lower prices than natural gas.

(i) In the Pacific Northwest, residential business has been lost to low cost hydro-generated electricity and a significant volume of industrial interruptible sales to low cost "high sulphur" heavy fuel oil. The high sulphur content fuel oil which cannot meet environmental standards in California and Hawaii is being marketed in the Pacific Northwest. The excess supply of this residual fuel oil, which is forecast to continue for some time, would tend to push its price down to or below any discounted gas price in order to maintain its market share. To the extent that these low cost fuel alternatives are available from indigenous sources, it is reasonable to expect that they would displace imported natural gas.

(ii) In the Montana market, the greatest impact is being felt in the industrial market where low cost indigenous coal is displacing natural gas for industrial uses. It would be unrealistic to expect Canadian natural gas to hold its market share in competition with low cost indigenous coal.

(iii) Other United States markets, for example, California, are willing to buy Canadian natural gas at the current

Canadian substitution value. Off-line sales from the Pacific Northwest to these areas have taken place in the past and it is assumed, subject to pipeline capacity, that the United States authorities would continue to authorize such sales in order that Canadian gas could move to those markets where a need exists.

(iv) Both Alberta and British Columbia have stated that they are opposed to the United States proposal for discount pricing. British Columbia would experience most of the impact since their primary market area for exports is the U.S. Pacific Northwest. Their views would be important in any proposal to reduce prices.

In the opinion of the Board, a system of discount pricing as proposed by the Secretary of Energy of the United States would, at this time, appear to be contrary to Canada's interest and should therefore not be instituted. However, the Board is prepared to review the need for price discounts in the future if such a course appears warranted, particularly in circumstances where the producing provinces express concern about their markets for gas.

IV <u>SPECIAL PRICING FOR GL-29</u>

The viable alternative fuel in the Northern Minnesota industrial market served by Licence GL-29 is coal. In the past, the Board has given recognition to the principles of border accomodation. The two Boise Cascade plants which straddle the Minnesota and Ontario boundary are economically

interdependent. The pipeline system supplying this load serves residential communities on both sides of the border with no alternative sources of natural gas, and the loss of the largest single customer in the United States could affect the viability of the pipeline system. In the Board's judgement, the export price applicable to GL-29 should be less than the recommended price for other licences in recognition of the unique circumstances in which almost all of the gas exported is consumed by one customer and any disruption could adversely affect the residential and commercial customers in that area.

The Board, as a matter of judgement, believes that a price of $3.40 per gigajoule (GJ) ($3.65 per MMBtu) is appropriate to the circumstances.

V PEAKING CONTRACTS

No special study of the two small peaking contracts was carried out and it was assumed that the present pricing arrangements would continue.

VI FINDINGS

The Board finds that since its last report, the delivered cost of crude oil imported into Canada has risen sharply due to unilateral decisions by certain OPEC nations to raise significantly their price to between $24.50 to $34.50 per barrel.

The United States Department of Energy has estimated that the impact of OPEC raising crude oil prices will raise the average price for oil imported under term contract to $28.00 to

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$29.00 ($4.83 to $5.00 per MMBtu) compared with an average price of $22.00 per barrel ($3.79 per MMBtu) at the end of November 1979.

The Board finds that there is no reason to change its method of determining the general export price based on the substitution value of imported oil into Eastern Canada.

The Board finds that the general price at the international border should now be $4.17 per gigajoule (GJ) ($4.47 per MMBtu). In making this finding, the Board recognizes that some shifts in markets may be necessary and that the changes may take time before they can be accomplished.

The Board finds that it is not in Canada's interest to institute special discounts for certain regions at this time, but that the situation should be kept under review.

The Board finds that the price at the international boundary for GL-29 should be $3.40 per gigajoule (GJ), ($3.65 per MMBtu).

The Board notes that the two previous price changes were accomplished 30 days after the Canadian decision was made and announced and assumes that future ones can be accomplished in the same time frame.

VII RECOMMENDATIONS

In accordance with its obligations under Section 14 of the National Energy Board Act Part VI Regulations, the Board makes the following recommendation to the Governor in Council for the pricing of Canadian natural gas exports:

- that the price of natural gas exported each month under all licences, except GL-29, be increased to \$4.17 per GJ which is \$4.47 per MMBtu (See page, Table I).
- that the export price for gas exported under Licence GL-29 should be increased to \$3.40 per GJ which is \$3.65 per MMBtu.
- that no change be made in the pricing of peaking gas at this time.
- In order to allow sufficient lead time for United States regulatory action, the recommended price changes should be effective 30 days after approval is granted by the Governor in Council.

VIII EFFECT OF RECOMMENDATION

As a result of this recommendation, and assuming the 1978-79 level of exports is maintained, there could be some \$985 million additional revenue from natural gas exports, bringing the total value of natural gas exports to about \$4.3 billion annually.

All of which is respectfully submitted.

C.G. Edge

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